[0019] The generating of the non-inverted signals and the inverted signals may include: generating the non-inverted signals by using a first low noise amplifier (LNA); and generating the inverted signals by using a second LNA.

[0020] The generating of the non-inverted signals and the inverted signals may further include adjusting a gain of at least one of the non-inverted signals and the inverted signals.

[0021] The generating of the first summing signal may include: adjusting phases of the non-inverted signals; and generating the first summing signal by summing non-inverted signals whose phases are adjusted, and the generating of the second summing signal may include: adjusting phases of the inverted signals; and generating the second summing signal by summing inverted signals whose phases are adjusted.

[0022] The adjusting of the phases of the non-inverted signals may include adjusting the phases of the non-inverted signals by delaying at least one of the non-inverted signals by a predetermined period of time, and the adjusting of the phases of the inverted signals may include adjusting the phases of the inverted signals by delaying at least one of the inverted signals by a predetermined period of time.

[0023] The adjusting of the phases of the non-inverted signals may include: obtaining a plurality of non-inverted signal values by sampling the non-inverted signals; storing the plurality of non-inverted signal values in a plurality of first capacitors; and generating the non-inverted signals whose phases are adjusted by obtaining the plurality of non-inverted signal values from the plurality of first capacitors, and the adjusting of the phases of the inverted signals may include: obtaining a plurality of inverted signal values by sampling the inverted signals; storing the plurality of inverted signal values in a plurality of second capacitors; and generating the inverted signals whose phases are adjusted by obtaining the plurality of inverted signal values from the plurality of second capacitors.

[0024] The method may further include: obtaining differentially amplified signals respectively corresponding to a plurality of sub-arrays constituting the 2D probe; and generating an ultrasound image based on the differentially amplified signals.

[0025] The method may further include determining the first transducers of the first group and the second transducers of the second group in the plurality of transducers.

BRIEF DESCRIPTION OF THE DRAWINGS

[0026] These and/or other aspects will become apparent and more readily appreciated from the following description of the embodiments, taken in conjunction with the accompanying drawings in which:

[0027] FIG. **1** is a view for explaining a two-dimensional (2D) probe and a sub-array, according to an exemplary embodiment;

[0028] FIG. **2** is a block diagram for explaining a first signal processing method according to an exemplary embodiment;

[0029] FIGS. **3**A through **3**C are diagrams for explaining a method of adjusting phases of non-inverted signals, according to the first signal processing method;

[0030] FIG. **4** is a block diagram for explaining a second signal processing method according to an exemplary embodiment;

[0031] FIGS. **5**A through **5**C are diagrams for explaining a method of adjusting phases of non-inverted signals and inverted signals, with respect to the second signal processing method;

[0032] FIG. **6** is a flowchart of a third signal processing method according to an exemplary embodiment;

[0033] FIG. **7** is a view for explaining first transducers of a first group and second transducers of a second group, according to an exemplary embodiment;

[0034] FIG. **8** is a block diagram for explaining the third signal processing method according to an exemplary embodiment;

[0035] FIGS. **9**A and **9**B are diagrams for explaining a method of adjusting phases of non-inverted signals and inverted signals, with respect to the third signal processing method;

[0036] FIG. **10** is a diagram for explaining the third signal processing method;

[0037] FIG. **11** is a view for explaining a process of obtaining an ultrasound image, according to an exemplary embodiment;

[0038] FIG. **12** is a table for comparing parameters of various signal processing methods, according to an exemplary embodiment;

[0039] FIG. **13** is a block diagram illustrating a configuration of an ultrasound device according to an exemplary embodiment;

[0040] FIG. **14** is a block diagram illustrating a configuration of the ultrasound device according to another exemplary embodiment; and

[0041] FIG. **15** is a block diagram illustrating a configuration of a wireless probe according to an exemplary embodiment.

DETAILED DESCRIPTION

[0042] The terms used in this specification are those general terms currently widely used in the art in consideration of functions regarding the inventive concept, but the terms may vary according to the intention of one of ordinary skill in the art, precedents, or new technology in the art. Also, some terms may be arbitrarily selected by the applicant, and in this case, the meaning of the selected terms will be described in detail in the detailed description of the present specification. Thus, the terms used herein have to be defined based on the meaning of the terms together with the description throughout the specification.

[0043] Throughout the specification, it will also be understood that when a component "includes" an element, unless there is another opposite description thereto, it should be understood that the component does not exclude another element and may further include another element. In addition, terms such as " . . . unit", " . . . module", or the like refer to units that perform at least one function or operation, and the units may be implemented as hardware or software or as a combination of hardware and software.

[0044] Throughout the specification, an "ultrasound image" refers to an image of an object, which is obtained using ultrasound waves. Furthermore, an "object" may be a human, an animal, or a part of a human or animal. For example, the object may be an organ (e.g., the liver, the heart, the womb, the brain, a breast, or the abdomen), a blood vessel, or a combination thereof. Also, the object may be a phantom. The phantom means a material having a density, an effective atomic number, and a volume that are